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=> index bioscience
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68 FILES IN THE FILE LIST IN STNINDEX

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=> fusion and TOlAIII
           3   FILE BIOSIS
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           2   FILE BIOTECHNO
           4   FILE CAPLUS
          66   FILE DGENE
           1   FILE EMBASE
           3   FILE ESBIOBASE
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           1   FILE IFIPAT
           1   FILE LIFESCI
           4   FILE MEDLINE
           3   FILE SCISEARCH
           3   FILE TOXCENTER
           2   FILE USPATFULL
           1   FILE WPIDS
           1   FILE WPINDEX

  16 FILES HAVE ONE OR MORE ANSWERS,   68 FILES SEARCHED IN STNINDEX

L1    QUE FUSION AND TOLAIII

=> d rank
F1          66   DGENE
F2           4   CAPLUS
F3           4   MEDLINE
F4           3   BIOSIS
F5           3   ESBIOBASE
F6           3   SCISEARCH
F7           3   TOXCENTER
F8           2   BIOTECHNO
F9           2   USPATFULL
F10          1   BIOTECHABS
F11          1   BIOTECHDS
F12          1   EMBASE
F13          1   IFIPAT
F14          1   LIFESCI
F15          1   WPIDS
F16          1   WPINDEX


=> file caplus medline biosis toxcenter biotechno biotechabs
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                                                           ENTRY    SESSION
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FILE 'BIOTECHABS' ACCESS NOT AUTHORIZED

=> fusion and TOlAIII
L2          16 FUSION AND TOLAIII

=> dup remove
ENTER L# LIST OR (END):l2
PROCESSING COMPLETED FOR L2
L3           5 DUP REMOVE L2 (11 DUPLICATES REMOVED)

=> d ti 1-5

L3   ANSWER 1 OF 5  CAPLUS  COPYRIGHT 2006 ACS on STN  DUPLICATE 1
TI   Solution Structure of the E.coli TolA C-terminal Domain Reveals
     Conformational Changes upon Binding to the Phage g3p N-terminal Domain

L3   ANSWER 2 OF 5  CAPLUS  COPYRIGHT 2006 ACS on STN
TI   Use of Escherichia TolA domain for production and purification of
     recombinant fusion proteins

L3   ANSWER 3 OF 5  CAPLUS  COPYRIGHT 2006 ACS on STN  DUPLICATE 2
TI   Expression of proteins using the third domain of the Escherichia coli
     periplasmic-protein TolA as a fusion partner

L3   ANSWER 4 OF 5     MEDLINE on STN                  DUPLICATE 3
TI   The Tol/Pal system function requires an interaction between the C-terminal
     domain of TolA and the N-terminal domain of TolB.

L3   ANSWER 5 OF 5  CAPLUS  COPYRIGHT 2006 ACS on STN  DUPLICATE 4
TI   TolAIII co-overexpression facilitates the recovery of
     periplasmic recombinant proteins into the growth medium of Escherichia
     coli


=> d ab bib 1-5

L3   ANSWER 1 OF 5  CAPLUS  COPYRIGHT 2006 ACS on STN  DUPLICATE 1
AB   The Tol-Pal system of Escherichia coli is a macromol. complex located in
     the cell envelope.  It is involved in maintaining the integrity of the
     outer membrane and is required for the uptake of two different types of
     macromols., which are bacteriotoxins (colicins) and DNA of filamentous
     bacteriophages.  The TolA protein plays a central role in these import
     mechanisms.  Its C-terminal domain (TolAIII) is involved in the
     translocation step via direct interaction with the N-terminal domain of
     colicins and the N-terminal domain of the phage minor coat gene 3 protein
     (g3pN1).  Extreme behaviors of TolAIII have been previously
     observed, since the structure of TolAIII either remained unaffected
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or adopted disordered conformation upon binding to different pore-forming colicins. Here, we have solved the 3D structure of free TolAIII by heteronuclear NMR spectroscopy and compared it to the crystal structure of TolAIII bound to g3pN1 in order to study the effect of g3pN1 on the tertiary structure of TolAIII. Backbone 1H, 15N and 13C resonances of the g3pN1-bound TolAIII were also assigned and used to superimpose the solution structure of free TolAIII on the crystal structure of the g3pN1-TolAIII fusion protein. This allowed us to track conformational changes of TolAIII upon binding. While the global fold of free TolAIII is mainly identical to that of g3pN1-bound TolAIII, shift of secondary structures does occur. Thus, TolAIII, which interacts also in vivo with Pal and TolB, is able to adapt its conformation upon binding to various partners. Possible models for protein binding mechanisms are discussed to explain this so-far unobserved behavior of TolAIII.

AN 2005:115822 CAPLUS
DN 142:331498
TI Solution Structure of the E.coli TolA C-terminal Domain Reveals Conformational Changes upon Binding to the Phage g3p N-terminal Domain
AU Deprez, Christophe; Lloubes, Roland; Gavioli, Marthe; Marion, Dominique; Guerlesquin, Francoise; Blanchard, Laurence
CS Laboratoire de Resonance Magnetique Nucleaire, Institut de Biologie Structurale Jean-Pierre Ebel (CNRS-CEA-UJF), UMR 5075, Grenoble, 38027, Fr.
SO Journal of Molecular Biology (2005), 346(4), 1047-1057
CODEN: JMOBAK; ISSN: 0022-2836
PB Elsevier B.V.
DT Journal
LA English
RE.CNT 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2006 ACS on STN
AB The present invention relates to fusion proteins, particularly for use in expression and/or purification systems. The present inventors have found that the TolAIII domain has remarkable properties which are of particular use as a fusion protein partner to achieve high levels of expression in a host cell. In one aspect of the invention, a TolAIII domain or a functional homolog, fragment, or derivative thereof is located towards the N-terminus of the fusion polypeptide and a non-TolA polypeptide is located towards the C-terminus of the fusion polypeptide. Thus, numerous proteins were produced with recombinant E. coli as fusions with E. coli TolA domain III, e.g., large amts. of BCL-XL protein were prepared For this purpose, three different expression plasmids were created: pTolE, pTolX, and pTolT. These plasmids are used to produce fusion proteins which may be cleaved with enterokinase, factor Xa, or thrombin, resp., to produce the desired protein.
AN 2003:551526 CAPLUS
DN 139:112735
TI Use of Escherichia TolA domain for production and purification of recombinant fusion proteins
IN Gokce, Isa; Anderluh, Gregor; Lakey, Jeremy Hugh
PA Newcastle University Ventures Limited, UK
SO PCT Int. Appl., 68 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | WO 2003057708 | A2 | 20030717 | WO 2003-GB78 | 20030110 |
| | WO 2003057708 | A3 | 20031231 | | |

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BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

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| CA | 2472328 | AA | 20030717 | CA 2003-2472328 | 20030110 |
| AU | 2003202005 | A1 | 20030724 | AU 2003-202005 | 20030110 |
| EP | 1465999 | A2 | 20041013 | EP 2003-700857 | 20030110 |
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| JP | 2005514028 | T2 | 20050519 | JP 2003-558022 | 20030110 |
| US | 2005130269 | A1 | 20050616 | US 2003-501071 | 20030110 |
| PRAI GB | 2002-689 | A | 20020110 | | |
| WO | 2003-GB78 | W | 20030110 | | |

L3 ANSWER 3 OF 5 CAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 2
AB The third domain of the periplasmic protein TolA from Escherichia coli (TolAIII) was used as a fusion partner in the expression of various proteins from bacteria and eukaryotes. TolAIII is small domain, expressed in high yields as a soluble protein in the cytoplasm of E. coli. Proteins were linked to the C-terminus of TolAIII by a short flexible linker containing sites for endopeptidases. Three different vectors were prepared, containing sites for enterokinase, thrombin or factor Xa. Fusion proteins also contain a His6-Ser2 tag at their N-terminus for easier purification Up to 90 mg fusion protein per L bacterial culture was obtained using these vectors. Colicin N R-domain was expressed with this system as a fusion and processed further for functional studies. The yield of final pure R-domain was doubled as compared to the direct expression. The system may prove to be useful in the preparation of other peptides and proteins.
AN 2003:206520 CAPLUS
DN 140:13544
TI Expression of proteins using the third domain of the Escherichia coli periplasmic-protein TolA as a fusion partner
AU Anderluh, Gregor; Gokce, Isa; Lakey, Jeremy H.
CS Department of Biology, University of Ljubljana, Ljubljana, 1000, Slovenia
SO Protein Expression and Purification (2003), 28(1), 173-181
CODEN: PEXPEJ; ISSN: 1046-5928
PB Elsevier Science
DT Journal
LA English
RE.CNT 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 4 OF 5 MEDLINE on STN DUPLICATE 3
AB The Tol/Pal system of Escherichia coli is composed of the YbgC, TolQ, TolA, TolR, TolB, Pal and YbgF proteins. It is involved in maintaining the integrity of the outer membrane, and is required for the uptake of group A colicins and DNA of filamentous bacteriophages. To identify new interactions between the components of the Tol/Pal system and gain insight into the mechanism of colicin import, we performed a yeast two-hybrid screen using the different components of the Tol/Pal system and colicin A. Using this system, we confirmed the already known interactions and identified several new interactions. TolB dimerizes and the periplasmic domain of TolA interacts with YbgF and TolB. Our results indicate that the central domain of TolA (TolAII) is sufficient to interact with YbgF, that the C-terminal domain of TolA (TolAIII) is sufficient to interact with TolB, and that the amino terminal domain of TolB (D1) is sufficient to bind TolAIII. The TolA/TolB interaction was confirmed by cross-linking experiments on purified proteins. Moreover, we

show that the interaction between TolA and TolB is required for the uptake of colicin A and for the membrane integrity. These results demonstrate that the TolA/TolB interaction allows the formation of a trans-envelope complex that brings the inner and outer membranes in close proximity.

AN 2002255270 MEDLINE
DN PubMed ID: 11994151
TI The Tol/Pal system function requires an interaction between the C-terminal domain of TolA and the N-terminal domain of TolB.
AU Walburger Anne; Lazdunski Claude; Corda Yves
CS Laboratoire d'Ingenierie des Systemes Macromoleculaires, Institut de Biologie Structurale et Microbiologie, CNRS 31, Chemin Joseph Aiguier, Marseille, France.
SO Molecular microbiology, (2002 May) Vol. 44, No. 3, pp. 695-708. Journal code: 8712028. ISSN: 0950-382X.
CY England: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200207
ED Entered STN: 8 May 2002
Last Updated on STN: 23 Jul 2002
Entered Medline: 22 Jul 2002

L3 ANSWER 5 OF 5 CAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 4
AB Overprodn. of the third topol. domain of the transmembrane protein TolA ( TolAIII) in the periplasm of Escherichia coli confers a "leaky" phenotype to host cells by disrupting the integrity of the outer membrane and causing periplasmic proteins to leach into the growth medium. To examine the physiol. consequences of TolAIII overexpression in more detail and assess the usefulness of this strategy for the release of periplasmic recombinant proteins into the extracellular fluid, we constructed a ColE1-compatible plasmid encoding a fusion between the ribose binding protein signal sequence and TolAIII under T7lac transcriptional control. About half of the total TolAIII synthesized in IPTG-induced cells aggregated in a precursor form in the cytoplasm. However, the majority of the mature protein was soluble and located in the extracellular fluid. TolAIII-overproducing cultures exhibited only slight growth defects upon entry into stationary phase but underwent extensive lysis when treated with 0.1% (w/v) SDS, and were unable to divide when supplemented with 0.02% SDS. The loss of outer membrane integrity resulted in longterm damage since cell viability was reduced by three orders of magnitude compared to control or uninduced cells. Overexpression of TolAIII did not significantly interfere with the translocation and processing of a plasmid-encoded fusion between the OmpA signal sequence and TEM-β-lactamase but led to the release of most periplasmic proteins and 90% of the active enzyme into the extracellular fluid. Although the total levels of β-lactamase accumulation in TolAIII-overproducing cultures was only 1.5- to 2-fold less than in control cells, the formation of periplasmic inclusions bodies was completely suppressed. A threshold concentration of TolAIII was necessary for efficient release of periplasmic proteins since the viability and detergent sensitivity of uninduced cells was comparable to that of control cultures and 80% of the β-lactamase synthesized remained confined to the periplasm. (c) 1998 Academic Press.

AN 1998:671728 CAPLUS
DN 130:33638
TI TolAIII co-overexpression facilitates the recovery of periplasmic recombinant proteins into the growth medium of Escherichia coli
AU Wan, Eugene W.-M.; Baneyx, Francois
CS Department of Chemical Engineering, University of Washington, Seattle, WA, 98195, USA
SO Protein Expression and Purification (1998), 14(1), 13-22

CODEN: PEXPEJ; ISSN: 1046-5928
PB Academic Press
DT Journal
LA English
RE.CNT 47 THERE ARE 47 CITED REFERENCES AVAILABLE FOR THIS RECORD
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